

### Abstract

An ingredient cooking-operation recognition system is provided which is capable of precisely specifying an ingredient that is cooked by a person and a cooking operation for the ingredient, and accurately estimating a cooking recipe for a dish that is prepared by the person. This system includes: a sensing section 200 which has an optical camera 10 that photographs a person's cooking situation, a thermal camera 20, and a microphone 30 that acquires an environment sound; a feature-quantity template creation section 106 which creates a feature-quantity template using an ingredient database 103, a cooked-food database 104 and a cooking-operation database 105; and a recognition processing section 110 which calculates, on the basis of observation data which is acquired by the sensing section 200, an observation certainty factor for an ingredient that is cooked by the person and a cooking operation that is conducted by the person, creates a cooking flow based on this observation certainty factors, calculates a relevance factor of this cooking flow on the basis of a template certainty factor which is written in the feature-quantity template, and recognizes the ingredient, the cooking operation and a cooking recipe.